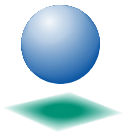
APPENDIX C.

Storm Water Pollution and Prevention Plan (SWPPP) for Construction Activities

Storm Water Pollution Prevention Plan for Construction Activities

SFPP East Line Expansion Project, EL Paso to Phoenix

March 5, 2004



CH2MHILL

Contents

Section Page

Contents ..... **i**
List of Tables ..... **i**
Acronyms ..... **iii**
1.0 Introduction **1**
Purpose 1
2.0 Site Description **2**
A Description of the Construction Activities 2
Affected Area of the Site 3
Runoff Coefficient 4
Location and Description of Any Anticipated Storm Water or Non-Storm Water Components 4
Topography 4
Regional and Site Surface Hydrology 5
Endangered Species and Historic Places 6
3.0 Best Management Practices for Storm Water Pollution Prevention **7**
Control Measures for Pollutant Sources During Construction Activities 7
Erosion and Sediment Control Plan 8
Materials Handling 11
Spill Prevention, Control, and Response 11
Measures to Protect Endangered Species and Critical Habitat 12
Other Controls 12
4.0 Inspection Procedures **13**
Inspection Requirements for Sites During Construction 13
5.0 Recordkeeping **15**

Tables

3-1 Structural Control Measures 10
3-2 Stabilization Control Measures 11

4-1 Storm Water BMP Maintenance Guidelines 18

Acronyms

BMP	best management practice
CFR	Code of Federal Regulations
EA	environmental assessment
EPA	U.S. Environmental Protection Agency
ft^2	square feet
mi	mile
MP	Mile Post
MSDS	Material Safety Data Sheet
NPDES	National Pollutant Discharge Elimination System
SCP	Sediment Control Plan
SFPP	SFPP, L.P.: Operating partnership for Kinder Morgan Energy Partners, L.P.
SWPPP	Storm Water Pollution Prevention Plan

1.0 Introduction

Purpose

SFPP, L.P. (SFPP) operating partnership for Kinder Morgan Energy Partners, L.P. is proposing to construct a petroleum products pipeline divided into four segments that will generally parallel existing pipelines along SFPP's present route from El Paso, Texas to Phoenix, Arizona. This project, the SFPP East Line Expansion Project, will provide much needed additional capacity for petroleum products into the rapidly growing Tucson/Phoenix markets. The SFPP plan is to begin construction in the second-third quarter of 2005.

This Storm Water Pollution Prevention Plan (SWPPP) was developed for the construction activities related to SFPP's pipeline in New Mexico and Phoenix, Arizona consistent with the U.S. Environmental Protection Agency (EPA) Region 6 and Region 9 National Pollutant Discharge Elimination System (NPDES) General Construction Storm Water Permit (Storm Water Permit) conditions. The SWPPP for the Texas portion of the pipeline construction will be consistent with Texas Commission on Environmental Quality (TCEQ) Texas Pollutant Discharge Elimination System (TPDES) permit requirements.

This plan provides an overview of proposed construction activities at the SFPP route, and includes procedures that will be implemented during construction activities to prevent or reduce pollutants in storm water discharges. Each of the following elements is addressed consistent with the Storm Water Permit:

- Site description
- A description of control measures or Best Management Practices (BMPs) that will be implemented to control pollutants in storm water discharges
- Procedures for maintaining control measures
- Inspection procedures
- Identification of non-storm water discharges

This plan is a working document and will be modified as necessary when there is a change in design, construction, operation, or maintenance activities. Minor changes shall be handwritten in this plan. The plan shall be revised and re-issued if there are significant changes (e.g., change in construction area boundary described in attached map) or when there are a large number of handwritten changes to this plan.

2.0 Site Description

The East Line system consists of two parallel pipelines - an 8-inch and a 12-inch - originating in El Paso, Texas. The 8-inch pipeline terminates in Tucson, Arizona and the 12-inch continues to Phoenix, Arizona. The 12-inch line between Tucson and Phoenix contains two segments that are 8 inches in diameter. The four segment locations are as follow:

- Segment 1 is defined as the Diamond Junction to Breakout Segment and includes the portion of the proposed 16-inch pipeline between Milepost (MP) 9.10 at the existing Diamond Junction facility and MP 15.3 at the proposed Breakout facility. From Diamond Junction, the proposed pipeline follows existing pipelines along the northwest side through Fort Bliss, TX. After approximately 5 miles, the line crosses the Union Pacific Railroad and parallels an existing pipeline corridor heading in a northwesterly direction. This corridor is currently occupied by multiple El Paso Natural Gas & SFPP Pipelines.
- Segment 2 is defined as the Rio Grande to Apache Pass Segment and includes the portion of the proposed 16-inch pipeline between Milepost (MP) 38.86 and MP 208.16 at the Apache Pass valve. The proposed pipeline follows existing pipelines along the north side. After approximately 25 miles, the line runs parallel to the Union Pacific Railroad for another 13 miles; at this point, it also parallels Interstate 10 (I-10). The line generally continues to follow the I-10 and Union Pacific Railroad corridor until separating for the last 23 miles, continuing along the existing pipeline to the Apache Pass valve. There are two short, alternative alignments in the area of the Deming Station and west of the Lordsburg Station.
- Segment 3 is defined as the Marana to Toltec Segment and includes the portion of the proposed 12-inch pipeline between MP 335.89 and MP 366.74 (at the Toltec Pump Station). This segment runs entirely along I-10 and the Union Pacific Railroad corridor, except for the re-route around Eloy (approximately 2 miles) where the route crosses I-10 and proceeds to the Toltec Station.
- Segment 4 is defined as the Bon to Salt River Segment and includes the portion of the 12-inch pipeline between MP 386.81 (Bon) and MP 420.40 (Salt River). The proposed route follows the existing pipeline except for a re-route around the small town of Maricopa to avoid Union Pacific Railroad property and the town. An alternative route passes through the town, as does the existing pipeline being replaced. A large portion of this segment is within the Gila River Indian Reservation. This segment crosses the Gila River.

A Description of the Construction Activities

The construction activities of the East Line pipeline would include the installation and replacement of approximately 233.2 miles of pipeline. The upgrades include the installation of approximately 167.2 miles of 16-inch-diameter pipeline between El Paso and Tucson and

approximately 66 miles of 12-inch-diameter pipeline between Tucson and Phoenix. The construction activities generally would take place in the Right-of-Way corridor at a width of approximately 100 feet.

Typically, a 5 to 6 foot deep ditch is excavated. However, the depth of the ditch can vary when special conditions are encountered that require additional depth. A typical trench will be 24 to 36 inches wide. The ditch will be excavated using trenchers, tracked and/or wheeled backhoes. An exception to the mechanical excavation will be hand digging to locate buried utilities, such as other pipelines, cables, waterlines and sewerlines. No blasting is anticipated. Water trucks are used for dust control along the right-of-way as required.

The type of soils encountered will determine the type of equipment used for ditching. Harder soils such as caliche require larger trenchers and generally cannot be excavated using a backhoe.

When segregation of topsoil is required, an excavator will be used to remove the designated amount of topsoil. This topsoil is typically placed along the side of the ditch, opposite the side designated for pipe assembly.

The construction activities include the following actions:

- Ditching
- Pipeline Handling and Stringing
- Field Pipe Coating on girth welds
- Lowering and Backfilling
- Cleanup and Restoration

The control measures identified in this SWPPP are applicable to the construction activities described above and will be implemented as appropriate during these activities.

Potential Sources of Contamination from Construction

The potential sources of pollutants that could be discharged in storm water during construction activities include:

1. Vehicle and equipment fueling
2. Load and unloading areas
3. Vehicle and equipment maintenance areas
4. Excavated/trenched areas
5. Excavated soil and equipment staging areas
6. Waste and material storage areas

Affected Area of the Site

The area to be affected by new construction will be approximately 2,826.44 acres (233.2 miles x 5,280 feet x 100 feet wide /43,560 square feet [ft^2]/acre). The permanent easement will be an area of generally 10 feet wide x 233.2 miles x 5,280 feet/43,560 ft^2/acre= 282.7 acres.

Runoff Coefficient

The runoff coefficient ("C") is the percentage of precipitation volume that will not be absorbed by the ground surface. The runoff co-efficient will vary for different portions of the project length especially due to the different elevations found in the rocky region as described in the Topography section found in Section 2. An Erosion and Sediment Control study can be found in Section 3.

Location and Description of Any Anticipated Storm Water or Non-Storm Water Components

Other construction activities include pump station and terminal construction.

There are several pump stations along the East Line system pipelines: El Paso Station (8-inch and 12-inch), Deming Station (8-inch and 12-inch), Lordsburg Station (8-inch only), Tucson Terminal (12-inch only), Toltec Station (12-inch only) and Phoenix Terminal (12-inch / 8-inch).

These pump stations and terminals will be upgraded as part of this project to accommodate the increased capacity resulting from the proposed pipeline upgrades described in Section 3.1. Deming Station and Tucson Terminal are the only facilities along the proposed route that will require pump upgrades.

In addition, a new breakout terminal will be installed approximately at M.P. 15.7. The terminal will receive product from three inbound pipelines, accumulate the product in the tanks, and ship out on two outbound lines at higher flow rates. Storage and pumping will be the main activities at this terminal.

Topography

The route that contains the East Line pipeline has elevations that vary from roughly 700 to nearly 4,000 feet. Typical dry desert topography is observed in this rocky region along with mesas and plateaus. The East Line pipeline also crosses the Chihuahuan and Sonoran Desert.

The Chihuahuan Desert's northern portion extends into southeastern Arizona, southern New Mexico, and Trans-Pecos Texas. The region is also characterized by mountain ranges, separated by valleys (bolsons) throughout. The Franklin Mountains, which bisect the northern Chihuahuan Desert city of El Paso, is a typical medium-sized range. Desert mountains range from slight prominences to soaring highlands. Regardless, such ranges provide habitats absent on the flatlands and add new species to the regional biota.

The Chihuahuan Desert has relatively high elevations that can reach 5500 ft. This desert tends to have hot summers and cool to cold winters with occasional winter frosts, and/or freezes.

The Chihuahuan Desert is predominantly a shrub desert. Common plants include the Four-winged Saltbush (Atriplex canescens), Mariola (Parthenium incanum), and Honey Mesquite

(Prosopis glandulosa); succulents such as a variety of small to medium-sized cacti, yuccas (Yucca elata, Yucca torreyi), and agaves (including Agave lechuguilla, also often considered an indicator plant of the Chihuahuan Desert). Various grasses also occur, including Black Gramma (Bouteloua eriopoda) and Tobosa Grass (Hilaria mutica). Other plants include Ocotillo (Fouquieria spendens), Sotol (Dasylirion spp.), and the Barrel Cactus (Ferrocactus wislizenii).

Animals that can be found in the Chihuahuan Desert include Desert Cottontail (Sylvilagus audubonii), Black-tailed Jack Rabbit (Lepus californicus), Cactus Mouse (Peromyscus eremicus), Kit Fox (Vulpes velox), Cactus Wren (Campylorhynchos brunneicapillus), Greater Roadrunner (Geococcyx californianus), Mojave Rattlesnake (Crotalus scutulatus), Coachwhip snake (Masticophis flagellum), New Mexican Whiptail lizard (Cnemidophorus neomexicanus), Red-spotted Toad (Bufo punctatus), and Tiger Salamander (Ambystoma tigrinum) (http://nasa.utep.edu/chih/chihdes.htm).

The Sonoran Desert is an arid region covering 120,000 square miles in southwestern Arizona and southeastern California, as well as most of Baja California and the western half of the state of Sonora, Mexico. Subdivisions of this hot, dry region include the Colorado and Yuma deserts. This is the hottest of our North American deserts, but a distinctly bimodal rainfall pattern produces a high biological diversity. Winter storms from the Pacific nourish many West Coast annuals such as poppies and lupines, while well-developed summer monsoons host both annuals and woody plants originating from the south. Freezing conditions can be expected for a few nights in winter.

Trees are usually well developed on the desert ranges and their bajadas. Often abundant on these well-drained soils are Little-leaf Palo Verdes, Desert Ironwoods, Catclaw and Saguaro.

The understory consists of three, four or even five layers of smaller woody shrubs. Tall chollas may occur in an almost bewildering array of species. The alluvial lowlands host communities of Desert Saltbush, wolfberry and bursage. On coarser soils, Creosote Bush and bursage communities may stretch for miles. Where the water table is high, Honey or Velvet Mesquite may form dense bosques or woodlands.

Other species are restricted to alkaline areas. Stream sides may be lined with riparian woodlands composed of Arizona Ash, Arizona Black Walnut, Fremont Cottonwood and various willows, with a dense understory of Arrow-weed, Seepwillow and Carrizo. The Sonora Desert is rich in animal life as well, with many species in all groups derived from tropical and subtropical regions (www.desertusa.com/du_sonoran.html).

Regional and Site Surface Hydrology

Surface water drains across the region via arroyos and canyons that are typically dry drainageways. Surface water ultimately discharges to the Rio Grande and Colorado River if flows are of sufficient enough volume to reach the river rather than infiltrating into the porous arroyo and canyons. In the portions of land in El Paso or Fort Bliss, surface waters either infiltrate into the desert soils or are captured in unlined stormwater retention ponds, but do not flow to the Rio Grande.

Endangered Species and Historic Places

Consistent with the conditions of the Storm Water Permit, the impacts of storm water discharge-related activities on federally listed endangered and threatened species, and designated critical habitat must be assessed. These species may include the following species.

Special Status Species Potentially Affected by the Proposed Action

Common Name	*Scientific Name*	Status
Cactus ferruginous pigmy-owl	*Glaucidium brasilianum cactorum*	ESA-Endangered
Northern aplomado falcon	*Falco femoralis septentrionalis*	ESA-Endangered
Western burrowing owl	*Athene cunicularia*	BLM Sensitive
Jaguar	*Panthera onca*	ESA-Endangered
Lesser long-nosed bat	*Leptonycteris curasoae yerbabuenae*	ESA-Endangered
Cave myotis	*Myotis velifer*	BLM Sensitive
Fringed myotis	*Myotis thysanodes*	BLM Sensitive
Mexican long-nosed bat	*Leptonycteris nivalis*	ESA-Endangered
Mexican long-tongued bat	*Choeronycteris mexicana*	BLM Sensitive, AZ-WC
Western small-footed myotis	*Myotis cillolabrum*	BLM Sensitive
California leaf-nosed bat	*Macrotis californicus*	BLM Sensitive, AZ-WC
Desert tortoise-Sonoran population	*Gopherus agassizi*	BLM Sensitive, AZ-WC
Texas horned lizard	*Phrynosoma cornutum*	BLM Sensitive
Acuna cactus	*Echinomastus erectocentrus acunensis*	ESA-Candidate
Sand prickly-pear cactus	*Opuntia arenaria*	New Mexico - Threatened

ESA-Endangered—A species that is considered to be in danger of extinction throughout all or a significant portion of its range and is listed under the Endangered Species Act.

ESA-Candidate—Any species for which there is sufficient information on biological vulnerability and threats to support a proposal to list as endangered or threatened under the Endangered Species Act but for which preparation and publication of a proposal by the USFWS is precluded by higher-priority listing actions.

BLM Sensitive—Species occurring on BLM land that are considered sensitive by the state offices.

New Mexico - Threatened—A species that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range in New Mexico as determined by the New Mexico Department of Game and Fish.

AZ-WC = Wildlife of Special Concern in Arizona—Species whose occurrence in Arizona is or may be in jeopardy, or with known or perceived threats or population declines, as described by the Arizona Game and Fish Department's listing of Wildlife of Special Concern in Arizona October 1996 Draft.

An Environmental Assessment (EA) has been performed to assess potential impacts the project might have on endangered, threatened, or species of concern in the project area. The

EA also investigates cultural resources impacts as relevant by the National Historic Preservation Act, the Bureau of Indian Affairs and other agencies.

3.0 Best Management Practices for Storm Water Pollution Prevention

The best management practices (BMPs) described below shall be implemented as appropriate to prevent and control storm water run-on and runoff during construction activities at the SFPP route. The description of controls includes:

1. Control measures for potential pollutant sources
2. Erosion and sediment controls, including structural and stabilization practices
3. Materials handling
4. Spill prevention, control, and response

Control Measures for Pollutant Sources During Construction Activities

Specific measures to control pollution discharge from pollutant sources during construction include:

1. **Vehicle and Equipment Fueling Areas:** All fueling stations will have temporary secondary containment around the fuel tanks.

2. **Loading and Unloading Areas:** Any material/fuel spilled during loading and unloading will be cleaned up immediately.

3. **Vehicle and Equipment Maintenance Areas:** If vehicle maintenance is necessary, it will be performed in an area designated for this purpose. Any spills will be cleaned up immediately. Precautions will be taken to prevent the release of pollutants to the environment from vehicle maintenance. Precautions will include the use of drip pans, mats, and other similar methods. No vehicle wash water shall be allowed to run off the construction site or enter state waters.

4. **Excavated/Trenched Areas:** To prevent the mobilization of contaminants in storm water runoff from entering and/or leaving excavated areas, the BMPs described in the following section on Erosion and Sediment Controls will be implemented.

5. **Waste and Material Storage Area:** Materials on the construction site will be in stored in areas designated for that purpose. Suitable measures will be taken in these areas to reduce the likelihood of a discharge.

Erosion and Sediment Control Plan

In order to ensure that selected sediment and erosion control BMPs are appropriately protective of storm water quality the EPA requirements specified for New Mexico in the Construction General Permit require that operators develop a Sediment Control Plan (SCP). The SCP is not intended to be a separate document but rather is expected to be largely fulfilled by information that is included throughout an overall site-specific SWPPP. To complete the SCP a registered professional engineer must certify the rationale for choosing site BMPs based on demonstration that the BMPs will result in no increase in sediment yield from pre-construction conditions.

The following section will act as a Sediment Control Plan for the state of New Mexico as well as the whole route to include Texas and Arizona.

The construction activities at the SFPP route will conform to the following goals and criteria, as appropriate:

- Implement erosion and sediment controls during construction to retain sediment onsite to the extent practicable.
- Select, install, and maintain control measures in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections or other information indicate that a control measure has been used inappropriately or incorrectly, that control measure will be modified or replaced as necessary.
- In the event that sediment escapes the construction site, remove offsite accumulations of sediment to minimize offsite impacts if deemed necessary. This would be performed under proper clearances and landowner approvals.
- Remove sediment from sediment traps or sedimentation ponds when design capacity has been reduced by 50 percent.
- Implement construction practices at the SFPP route that prevent litter, construction debris, and construction chemicals exposed to storm water from becoming a pollutant source for storm water discharges.

Erosion and sediment runoff is controlled within the SFPP through the use of structural and/or stabilization practices. Structural control practices may include the use of straw bales, silt fences, earth dikes, drainage swales, sediment traps, and sediment basins. Stabilization practices may include temporary or permanent seeding, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, and preservation of mature vegetation.

There are several different structural controls that will be used to control the quality of the storm water coming off the construction site. Table 3-1 lists the controls that may be put in place during construction activities.

TABLE 3-1
Structural Control Measures

Control Measure	Location	Description of Control Measure
Silt Fencing	Along the perimeter of the excavation sites adjacent to streams, wetlands, or washes. Drainage areas should be less than 0.25 acre per 100 feet of fence length.	To protect streams or wetland areas, to prevent erosion, and to keep sediment onsite. Silt fencing consists of posts with filter fabric stretched across the posts. The lower end of the fence is vertically trenched and covered with back fill. This prevents water from passing by the fence without being filtered. The fabric allows for the water to pass offsite while retaining the sediment onsite.
Check Dams	On the average, where the grade change is more than 2 percent or where possible.	A check dam is a small, temporary dam constructed across a drainage ditch or channel. Its purpose is to slow down the speed of the concentrated flows. The reduced runoff speed will result in less erosion and gulling in the channel and allow the sediment to settle out. The check dams can be built with materials such as straw bales, rock, timber, or other material that will retain water.
Straw Bales	Installed around areas requiring protection such as wetlands to form a temporary containment.	Straw bales work much like silt fencing and may be used instead of silt fence. They can be used to form a barrier or redirect water. They impede storm water flow. Unlike silt fence, straw bales do not allow water to flow through freely, thus they are used where detention, not just filtration, is necessary.
Stream Crossing	Crossings may be necessary when working near or close to wetland areas. Areas of use will be determined in the field.	Bridge or culvert across a stream or watercourse for short-term use. The purpose is to prevent the damage to watercourses that would occur if vehicles were driven in the wetlands.
Sediment Basins	Sediment basins are required for drainage locations that serve 10 or more disturbed acres at one time. For drainage locations serving less than 10 acres, smaller sediment basins or sediment traps should be used. At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required.	Sediment basins are either temporary or permanent settling ponds with a controlled storm water release structure. Their function is to collect and store sediment-laden storm water from construction activities long enough to allow the sediment to settle out.

Stabilization practices that will be implemented, as appropriate, within the SFPP route are listed in Table 3-2. Final stabilization will consist of grading areas to final grading conditions.

Table 3-2
Stabilization Control Measures

Control Measure	Location	Description of Control Measure
Preservation of Natural Vegetation	Wherever practical.	Wherever possible, existing vegetation should be retained. It minimizes erosion potential and protects water quality. The preservation of natural vegetation between the silt fence and stream will provide additional water quality improvement prior to the storm water entering state waters.
Permanent seeding	Where reseeding is required, the ROW will be seeded with a certified weed free native seed mixture not to exceed 15 pounds per acre.	Provides stabilization of the soil and reduces erosion.
Mulching	On slopes steeper than 2:1 or on areas that have been seeded. Must be implemented within 14 days of activity ceasing.	Soil stabilization or erosion control practices where materials such as grass wood chips, hay, etc. are placed on the soil surface to allow seeded areas to become established

Materials Handling

The following materials handling practices will be implemented during construction activities:

1. The area will be kept free of trash and spilled oil. No liquid waste will be held on site in tanks.
2. Garbage and trash will be removed daily from the site in vehicles.
3. Material Safety Data Sheets (MSDSs) for substances used or stored on the construction site will be available for review and use.

Materials stored onsite shall be inventoried. Additional materials brought onsite will be recorded.

Spill Prevention, Control, and Response

Refer to the Spill Prevention and Control Plan, which is located in Appendix B of this document.

Measures to Protect Endangered Species and Critical Habitat

If endangered species and/or designated critical habitats are found on or in proximity to the construction site, a mitigation plan will be developed to determine the possible impacts the construction activity could have on the endangered species and address the necessary measures to minimize any impacts.

Other Controls

Employee Training

SFPP shall ensure that all appropriate personnel and subcontractors are aware of the SWPPP requirements and the measures upon which they need to comply.

Road Maintenance

Heavy equipment and vehicle traffic will be limited as much as possible to existing roads, or designated new roads, to minimize areas of new disturbances.

General Controls

The following general erosion control requirements shall be implemented during construction activities:

1. Minimize the time that bare soil is exposed before stabilized.
2. Minimize the disturbance to existing vegetation.
3. No solid materials, including building materials shall be discharged to waters of the United States, unless authorized under a Clean Water permit (i.e., 404 Permit).

The following general erosion control requirements shall be implemented after construction activities are complete:

1. Where practical, mulch or install excelsior blankets and reseed slopes greater than 3:1, depending on the length, exposure, and texture of the soils on the slope. Mulch may be natural, consisting of slash, brush, manure, and vegetation previously chipped and stockpiled; and/or clean straw, free from noxious weed seed, mold, and other harmful elements; or wood cellulose fiber. Mulch should be applied as soon as possible after seeding to reduce runoff and promote vegetation.

2. Furrow-contour sidehill slopes whenever equipment is available that can do so. Otherwise the final grading should be performed in a manner that will result in tracks and depressions contoured across the slope instead of down the "fall-line." This will not only minimize wind erosion, but will also "roughen" the earth to provide a microclimate of wind protection for new plants, and will help conserve precipitation for use in growth of new seed. This results in a reduction of sediment erosion.

3. Where slope cuts from erosion have developed (particularly along the faces of flood detention structures), remove loose granular material and fill the area with suitable soils to the original profile of the bank or slightly above the original profile. If the cut is not completely filled, the steeper area at the brow of the cut will encourage erosion and may

cause redevelopment of the cut. Inspect the area upstream from the cut carefully to determine if there was an irregularity in the ground profile that caused storm water to concentrate and erode the soils. Any such irregularity should be removed using the most appropriate BMP. This will ensure that water runs off the site as sheet flow.

Maintenance

All erosion and sediment control measures and other protection measures will be maintained in effective operating condition. Maintenance will be performed on an "as-needed" basis. Specific maintenance requirements include, but are not limited to:

1. Removal of sediment and other debris collected behind silt fences or hay bales.
2. Cleaning of sediment from detention ponds whenever the capacity of the ponds is reduced to 50 percent.

4.0 Inspection Procedures

Inspection Requirements for Sites During Construction

Consistent with the Storm Water Permit, inspection during construction activities of the site will be performed at least once every 30 days and within 24 hours of a precipitation event of 0.5 inches or greater, which may result in surface erosion. During seasonal arid periods in arid areas (areas with an average annual rainfall of 0 to 20 inches) and semi-arid areas (areas with an average annual rainfall of 10 to 20 inches), inspections shall be conducted at least once every month. Inspections shall consist of a review of the construction site perimeter, disturbed areas, and areas used for material storage that are exposed to precipitation. These areas will be reviewed for evidence of, or the potential for, pollutants entering the drainage system. The controls identified in Section 3 will be inspected to ensure they are being implemented properly.

As necessary, the SWPPP will be revised to incorporate any changes that come about as the result of the inspection. Changes that affect the description of pollutant sources or the pollutant prevention control measures will be made to the SWPPP within 7 days of the inspection, as required by the Storm Water Permit. A record of the inspection shall be kept at the construction site as part of the SWPPP.

Inspections shall be the responsibility of and performed by SFPP and/or its appointed designee. Inspections will be recorded on the SWPPP Inspection Checklist. A copy of an area-specific map or plan will accompany inspections and be manually updated as necessary during the inspection to reflect any changes or additions in the following features:

- Construction site boundaries
- Areas of soil disturbance
- Areas that will not be disturbed

- Approximate slopes after major grading
- Areas of cut and fill
- Locations of major erosion control facilities or structures
- Locations where stabilization practices are expected to occur
- Springs, streams, wetlands, and other surface waters
- Storm water discharge locations

The updated maps and the SWPPP Inspection Checklist will be maintained as records, consistent with the Storm Water Permit.

Table 4-1 on the following page provides a guideline for inspecting BMPs.

TABLE 4-1
Storm Water BMP Maintenance Guidelines

CHECK DAM Has accumulated sediment and debris been removed from behind dams? Have materials removed been properly disposed of?
EROSION CONTROL BLANKET Is fabric damaged, loose or need repairs?
INLET PROTECTION Is the inlet protection damaged, ineffective or need repairs? Has sediment been removed?
MULCHING Distributed uniformly on all disturbed areas? Any evidence of mulch being blown or washed away? Has the mulched area been seeded?
SEDIMENT BASIN Has sediment and debris been cleaned out of the basin? Have materials removed been properly disposed of?
SILT FENCE Is the fence damaged, collapsed, un-entrenched or ineffective? Has sediment been removed from behind fence? Is the silt fence properly positioned?
SLOPE DRAIN Is water bypassing or undercutting the inlet or pipe? Is erosion occurring at the outlet of the pipe?
STRAW BALE BARRIER Are the straw bales damaged, ineffective or un-entrenched? Has sediment been removed from behind bales? Are the bales installed and positioned correctly?
SURFACE ROUGHENING Any vehicle tracks evident on roughened slopes? Any evidence of erosion?

TABLE 4-1
Storm Water BMP Maintenance Guidelines

TEMPORARY SEEDING Are the seedbeds protected by mulch? Has any erosion occurred in the seeded area? Any evidence of vehicle tracking on seeded areas?
TEMPORARY SWALES Has any sediment or debris been deposited within the swales? Have the slopes of the swale eroded or has damage occurred to the lining?
VEHICLE TRACKING Is gravel surface clogged with mud or sediment? Is the gravel surface sinking into the ground? Has sediment been tracked onto public roads; has it been cleaned up?

5.0 Recordkeeping

Consistent with the Storm Water Permit, major grading events, initiation of stabilization measures, and other activities will be recorded as well as inspections.

SWPPP INSPECTION CHECKLIST

DATE:
INSPECTOR:

According to EPA's General Construction Storm Water Permit the construction site is to be inspected at least once every thirty (30) calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater. The general areas or items that need to be inspected include disturbed areas of the construction site, areas used for storage of materials, structural control measures, and locations where vehicles enter or exit the site. Storm water controls or BMPs including silt fences, check dams, inlet protection, mulching, seeding, etc. are to be individually inspected to determine any maintenance requirements and/or if they are operating as intended.

OVERALL SITE INSPECTION PROCEDURES	**YES**	**NO**	**N/A**	**COMMENTS/CORRECTIVE ACTION**
Is there any evidence of sediment leaving the construction site? If so, note areas.	☐	☐	☐	
Have any adverse impacts such as flooding, structural damage, erosion, spillage, or accumulation of sediment, debris or litter occurred on adjacent property, wetlands or surface waters?	☐	☐	☐	
Have the Storm Water BMPs been placed as shown on drawings or plans?	☐	☐	☐	
Are the Storm Water BMPs functioning as intended?	☐	☐	☐	
Is work being done according to approved plans?	☐	☐	☐	

INSPECTOR'S SIGNATURE:	**DATE:**